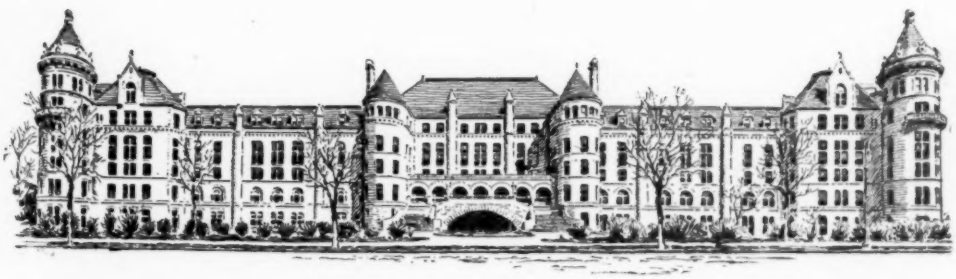
Volume III, Number 2 FEBRUARY, 1903

THE AMERICAN MUSEUM JOURNAL



WITH SUPPLEMENT ON

THE HAWK-MOTHS OF THE VICINITY OF NEW YORK CITY.

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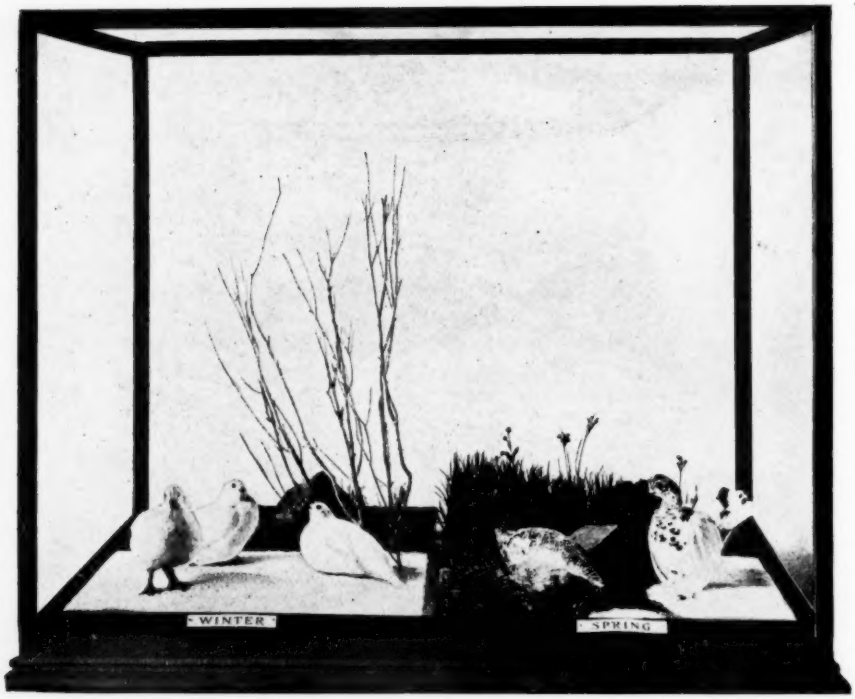

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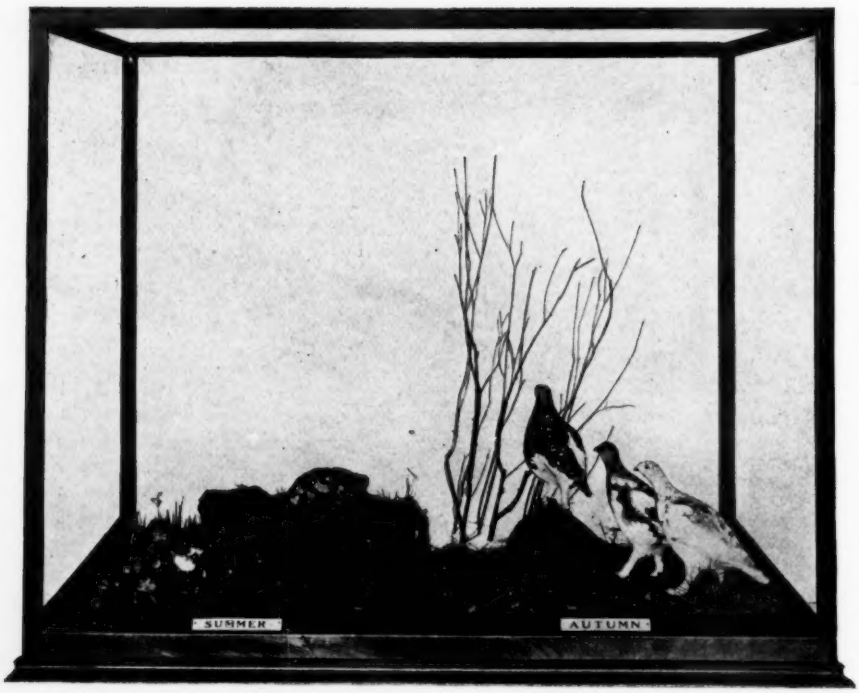

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THE PTARMIGAN GROUP

The American Museum Journal

VOL. III. FEBRUARY, 1903 No. 2.

THE Guide Leaflet sent out with this number of the JOURNAL describes in popular language the members of the family of SPHINGIDÆ, or "Hawk-Moths," which are to be found in the vicinity of New York City. The arrangement of the species in the Leaflet corresponds with that of the specimens in the cases, and the Leaflet, therefore, forms a convenient guide to the collection. More detailed descriptions of these beautiful and interesting moths will be found in Mr. Beutenmüller's article on the Sphingidæ which was published in Volume VII of the "Bulletin" of the Museum.

THE PTARMIGAN GROUP.

A GROUP, or rather an assemblage of four groups in one case, of the Ptarmigan was placed on exhibition in the Bird Hall on the main floor of the Museum in January. The four small groups together illustrate one of the most interesting cases of seasonal change known among birds. The group has been provided for through the liberality of J. D. Cadwalader, Esq.

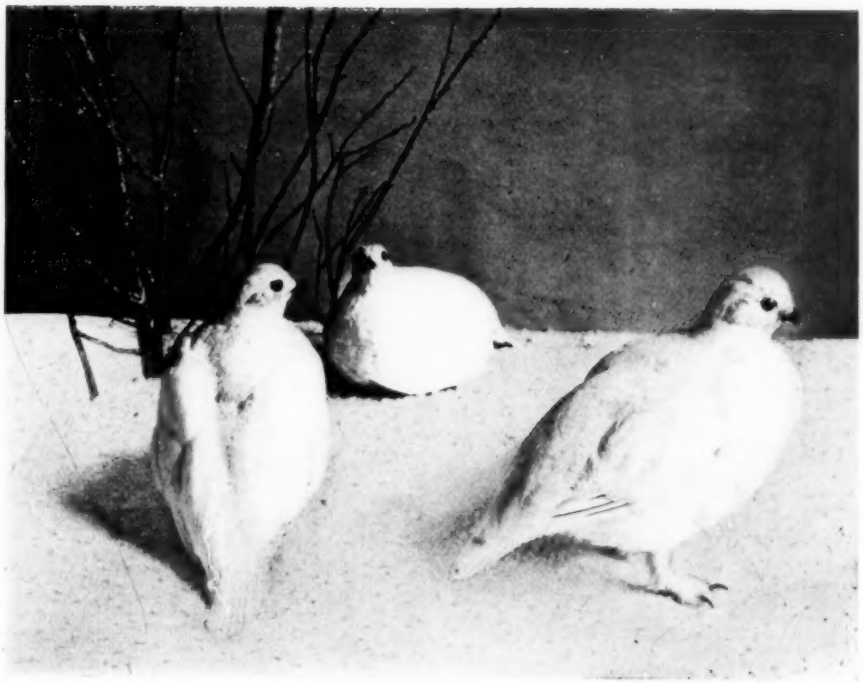
In the summer the birds are brown and black, in the autumn, grayish, and in the winter, white. These changes are accomplished by molt and feather-growth, not by change in the color of existing feathers, as has been stated by some writers, and are designed to protect the birds from their enemies by keeping them in harmony with their surroundings, and thereby rendering them inconspicuous. It will be observed that the white winter birds (group No. 1) molt in the spring (group No. 2), and pass directly into summer plumage (group No. 3).

It is a law among birds that the adults undergo a complete molt immediately after the cares of the nesting season are over, and that there shall be no further feather-growth until the following spring or summer. The Ptarmigan, however, obey only the first portion of this law. In response to what are evidently imperative physiological demands they molt directly after the nesting; but if they were to pass at once into their winter plumage, as is customary among birds, they would become pure white before snowfall and hence be made conspicuous by the plumage which is designed to protect them.

To bridge over the period between the normal, postnuptial molt and the season of snow, an additional plumage is assumed on the exposed parts of the body (group No. 4). This is worn only during late summer and early fall and is immediately succeeded by the winter plumage. The changes in the nature of the birds' surroundings are, therefore, as it were, imitated by the birds, which consequently are always difficult to see in the treeless regions they inhabit.

NEWS NOTES.

THREE new fossil specimens of interest have been placed on exhibition in the hall of Vertebrate Palæontology. One is the skull of a Duck-billed Dinosaur, an immense biped reptile nearly forty feet in length. The skull is three feet ten inches long and has a broad flat beak like that of the spoon-bill duck. This skull is part of a nearly complete skeleton which is being prepared for exhibition. The second specimen is the skull of a Mammoth of the largest size, with tusks measuring thirteen feet in length around the outside of their curvatures, probably the longest pair ever found. This specimen came from southern Texas, and is of a larger species than the Siberian mammoth. The third consists of the fore and hind limbs and a cast of the skull of the *Diprotodon*, an extinct Australian mammal of gigantic size. Like all the other Australian mammals it belonged to the Marsupial or Pouched division.



SCENES FROM THE PTARMIGAN GROUP

IN the April, 1902, issue of the Journal reference was made to the valuable specimens received by the Museum from the New York Zoölogical Park, through the kindness of the Director, Dr. William T. Hornaday. From April to December, 1902, inclusive, the accessions from this source have included 2 Orangs, 2 Baboons, 1 Gelada Baboon, 1 Barbary Ape, 12 Monkeys of several species, 8 Lemurs of several species, 1 Clouded Leopard, 1 Blue Fox, 2 Sea Lions, 1 Sun Bear, 1 Himalayan Bear, 2 Binturongs, 2 European Badgers, 1 Sand Badger, 1 Mountain Sheep, 1 Spanish Ibex, 1 Barbary Sheep, 4 American Bisons, 1 Musk-Ox, 1 Pronghorn Antelope, 1 Virginia Deer, 1 Florida Deer, 1 Mexican Deer, 1 Mule Deer, 2 Armadillos and various other mammals and a few birds. Some of these are available for mounting and for skeletons and the others add very valuable material to the study collection, including a number of species not previously represented in our collections.

DR. E. O. HOVEY of the Geological Department has started for the West Indies to make further studies upon the volcanic islands. He will continue the work which he began there last summer directly after the May eruptions, and, after noting the changes produced in St. Vincent and Martinique by the eruptions subsequent to the time of his leaving the latter island in July, he will visit the other volcanic islands of the chain of the Lesser Antilles for the purpose of comparing their condition with that of the recently devastated areas.

DURING the past month the Messrs. Hyde have had a second group of Navajo Indians at the Museum, the first having visited the Museum and the East during the winter of 1901–1902. Both groups of Navajos were brought East for the purpose of exhibiting here the native methods of blanket weaving used in the Southwest and to familiarize teachers and students with the primitive work of these nomads. The Navajo loom of the present day is practically a duplication of the loom that was used by the ancient Cliff-Dwellers hundreds of years before the Conquest. Centuries of contact with civilization have not changed the loom to any appreciable extent and at the present time the

only implements used in blanket work that they have borrowed from their white neighbors are the shears with which they shear their sheep and the cards used in preparing the wool for spinning.

A COLLECTION of personal ornaments from the State of Oaxaca, Mexico, pertaining to the Mixtecan-Zapotecan civilization, has been presented to the Museum by the Duke of Loubat.

This beautiful collection of the "gems" of ancient Mexico contains more than three hundred objects of gold, copper, jadeite of different hues from dark emerald green to white slightly tinged with green, turquoise, rock crystal, amethyst, agate, chalcedony, serpentine, obsidian and shell. Noteworthy pieces are a splendid miniature bell, made to represent the head of a monkey, a string of gold beads, two tiny beads of gold made in filigree, a frog carved out of rock crystal, a long perforated bead with spiral design, made out of obsidian, and a parrot carved from a vivid green pebble of jadeite. All of these specimens were found in ancient graves, and together with our already extensive collection of similar objects, form a unique exhibit in the Mexican Hall of the Museum.

A LARGE relief map of the city and harbor of New York, which was given by the firm of Johnson and Higgins to the New York Chamber of Commerce, and presented by the New York Chamber of Commerce to the American Museum of Natural History, has been placed on exhibition on the ground floor near the elevators. The elevations above, and the depressions below the level of mean low water, have been greatly magnified as compared with the horizontal scale. Although this gives a distorted appearance to the general surface, it facilitates the comparison of the various altitudes, and the relative drainage areas of the several river systems.

PROF. J. C. MERRIAM of the Department of Geology of the University of California spent about two weeks of the month of January at the Museum studying the collection of fossil mammals from the John Day beds of Miocene Tertiary age from the Far West, and identifying Oregon material from the California University collections by comparison with Professor Cope's type specimens.

LECTURES.

PROF. ALBERT S. BICKMORE'S second course of lectures for the season to teachers will be given Saturday mornings at half after ten o'clock according to the following programme.

January 24 and 31.—"Oxford, Westminster and the Coronation."

February 7 and 14.—"Glasgow and Edinburgh."

February 21 and 28.—"The Adirondack Park."

March 7 and 14.—"American Forests."

THE second course of lectures for the season offered by the City Board of Education in coöperation with the Museum was begun Tuesday, January 6. It consists of eight lectures on Tuesday evenings on European geography and eight lectures on Saturday evenings on electricity and magnetism. The geographical lectures are illustrated by stereopticon views, while the lectures on electricity are illustrated by means of experiments. The programme of the course is as follows:

Tuesday, January 6.—THOMAS EDWARD POTTERTON, "London: The World's Metropolis."

Saturday, January 10.—Prof. E. R. VON NARDROFF, "Magnetism and Diamagnetism." Illustrated.

Tuesday, January 13.—Prof. HENRY ZICK, "Berlin and Military Life in Germany."

Saturday, January 17.—Prof. E. R. VON NARDROFF, "Electricity at Rest."

Tuesday, January 20.—ERNEST R. HOLMES, "Paris."

Saturday, January 24.—Prof. E. R. VON NARDROFF, "Electricity in Motion: Its Chemical Effects."

Tuesday, January 27.—W. TORRENCE STUCHELL, "Switzerland."

Saturday, January 31.—Prof. E. R. VON NARDROFF, "Electricity in Motion: Its Heating Effects."

Tuesday, February 3.—Dr. AUGUSTA J. CHAPIN, "Venice."

Saturday, February 7.—Prof. E. R. VON NARDROFF, "Electricity in Motion: Its Magnetic Effects."

Tuesday, February 10.—Dr. AUGUSTA J. CHAPIN, "Naples and Pompeii."

Saturday, February 14.—Prof. E. R. VON NARDROFF, "Electricity in Motion: Its Inductive Effects."

Tuesday, February 17.—WILLIAM FREELAND, "Spain."

Saturday, February 21.—Prof. E. R. VON NARDROFF, "Cathode Rays, X Rays, Radium Rays."

Tuesday, February 24.—R. S. DAWSON, "La Belle France."

Saturday, February 28.—Prof. E. R. VON NARDROFF, "Electromagnetic Waves: Their Properties and Uses."

MEETINGS OF SOCIETIES.

THE New York Academy of Sciences will hold its regular meetings on Monday evenings throughout February, according to the following schedule. The meetings are held in the small Assembly Hall of the Museum and the public is invited to attend.

February 2.—Business meeting and section of Astronomy, Physics and Chemistry.

February 9.—Section of Biology.

February 16.—Section of Geology and Mineralogy.

February 23.—Section of Anthropology and Psychology.

THE meetings of the New York Entomological Society will be held in the Assembly Hall on February 3 and 17, and those of the Linnæan Society of New York in the same hall on February 10 and 24.

THE regular meeting of the New York Mineralogical Club will be held in conjunction with the Section of Geology and Mineralogy of the New York Academy of Sciences, Monday evening, February 16.

ON Saturday afternoon, January 24, at three o'clock, Prof. John B. Smith, of the State Agricultural Experiment Station at New Brunswick, N. J., gave an illustrated lecture on "Mosquitoes, their Life History and Habits." The lecture was arranged for in coöperation with the New York Entomological Society.

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Publications

The publications of the Museum consist of an Annual Report, in octavo, about 80 pages; the Bulletin, in octavo, of which one volume, consisting of about 400 pages, and about 25 plates, with numerous text figures, is published annually; the Memoirs, in quarto, published in parts at irregular intervals; an Ethnographical Album, issued in parts, and the American Museum Journal, published monthly, except July to September.

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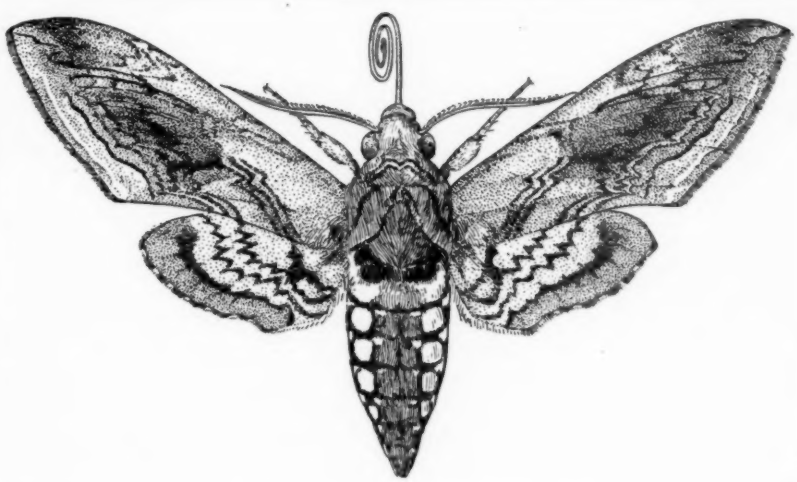

BY

William Beutenmüller

Curator of Entomology

SUPPLEMENT TO AMERICAN MUSEUM JOURNAL
VOL. III, No. 2, FEBRUARY, 1903
Guide Leaflet No. 10

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The Hawk-Moths of the Vicinity of New York City

A Guide Leaflet to the Collection on Exhibition
in the
American Museum of Natural History

By

WILLIAM BEUTENMÜLLER
Curator of Entomology

PUBLISHED BY THE MUSEUM
AS SUPPLEMENT TO THE AMERICAN MUSEUM JOURNAL
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THE HAWK-MOTHS OF THE VICINITY OF NEW YORK CITY.

By William Beutenmüller,
Curator of the Department of Entomology.

Family *Sphingidæ*.

The members of the family of Sphingidæ are commonly called "Hawk-Moths" on account of their powerful and rapid flight and their beak-like proboscis. Some of the species are also called Hummingbird Moths, owing to their peculiar habit of hovering like a hummingbird over flowers while drawing up nectar with their long proboscis. Some species fly during mid-day in the hot sunshine, while others fly late in the afternoon and at night.

The moths have long, narrow fore wings, with an oblique, excavated or scolloped outer margin. The hind wings are much shorter, with the outer margin entire, the anal angle usually produced and the apex rounded or pointed.

The head is usually clothed with smooth scales, or has a tuft between the antennæ. The eyes are hemispherical, and as a rule lashed with hairs in front above. The proboscis is well developed in most of the species, and is nearly as long as or longer than the body. When not in use the organ is curled up like a watch-spring, between the palpi. The antennæ are fusiform, ciliate in the male and simple in the female, and with the tip more or less bent into a hook. In some species the antennæ are club-shaped, with a few short, bristle-like hairs at the tip.

The thorax is well developed, either with the vestiture smooth, or with the posterior portion with erect scales, or with the anterior portion with an elevated tuft.

The body usually is long and graceful, with the segments gradually tapering. Some species are provided with a more or less entire fan-like tuft at the end of the body.

The eggs are green, smooth, oval or oblong oval. They are usually laid singly, on the under sides of a leaf, and the young

caterpillar hatches in from five to seven days after the eggs have been deposited. The caterpillars as a rule shed their skins or moult five times before reaching maturity. The mature caterpillars are smooth, or sometimes more or less granulated over the surface. The last segment is provided with a horn, or marked with a tubercle or polished eye-like spot instead. Most of the Hawk-Moth caterpillars are marked with seven lateral, oblique stripes. After reaching maturity, and when ready to transform, they descend from their food-plants to the ground. Most forms burrow into the soil, where they construct cells, in which they change to pupæ, but some species form their pupæ on the surface of the ground, in a loose, web-like cocoon between leaves. The pupæ are almost always chestnut brown, elongate, with the tongue-case either buried or detached and resembling the handle of a pitcher.

KEY TO THE HAWK-MOTHS.

Wings partly transparent	Group A.
Wings wholly opaque	" B.
With yellow markings on body	Section 1.
With yellow markings on hind wings	" 2.
With green and pink markings on wings	" 3.
With green markings on wings, without pink	" 4.
With pink markings on wings, without green	" 5.
With brown markings, without pink, green or yellow	" 6.
With gray or blackish brown markings, without pink, yellow or green	" 7.

Group A.—WINGS PARTLY TRANSPARENT.

Underside of thorax pale yellow without a line on each side.
Outer border of fore wings toothed within....*Hemaris thysbe.*
Like *thysbe*, but larger.....var. *floridensis.*
Outer border of fore wings not toothed within...var. *ruficaudis.*
Underside of thorax pale yellow with a red-brown line on each side.
Outer border of fore wings even within.....*Hemaris gracilis.*

Underside of thorax pale yellow with a black line on each side.
Outer border of fore wings broad; toothed within.
Hemaris axillaris.
Like *axillaris*, but with outer border of fore wings not toothed within.....var. *marginalis.*
Outer border of fore wings narrow.....*Hemaris diffinis.*

Group B.—WINGS WHOLLY OPAQUE.

Section 1.—With yellow markings on body.

Abdomen with large yellow spots on each side.
Fore wings light gray..*Phlegethontius quinquimaculatus.*
" " dark gray.....*Phlegethontius carolina.*
" " sooty brown with white lines.
Phlegethontius rusticus.
Abdomen with two yellow transverse lines.
Fore wings rich brown with darker velvety brown band.....*Amphion nessus.*

Section 2.—With yellow markings on hind wings.

Fore wings chocolate brown with darker markings.
Hind wings yellow at base.....*Sphecodina abbotii.*
Fore wings rich brown with lilac lines.
Hind wings yellow, with an eye-like spot.
Smerinthus myops.
Fore wings almost uniform orange brown with lilac streaks.
Hind wings uniform orange with an eye-like spot.
Smerinthus astylus.
Fore wings ochre brown with oblique lines.
Hind wings black with a row of yellow spots.
Theretra tersa.
Fore wings brown, veins finely marked with black.
Hind wings ochre yellow, with a black outer band.
Sphinx lucitiosa.

Section 3.—With green and pink markings on wings.

Fore wings olive green with a broad buff band from base to tip: veins partly marked with white.

Hind wings pale green at base, marked with black, pink outwardly . . . . . *Philampelus vitis.*

Fore wings similar to *vitis* but darker.

Hind wings not pink outwardly, except at anal angle. *Philampelus linnei.*

SECTION 4.—**With green markings on wings, without pink.**

Fore wings an almost uniform green.

Hind wings marked with blue . . . . . *Argeus labruscæ.*

Fore wings green with whitish and pinkish lines.

Hind wings rusty brown with gray outer margin. *Ampelophaga versicolor.*

Fore wings olive gray with more or less distinct olive green band and shades.

Hind wings rusty brown with a gray patch at anal angle . . . . . *Ampelophaga myron.*

Fore wings pale olive with rich dark green shades and patches.

Hind wings pale green with large black patches. *Philampelus pandorus.*

SECTION 5.—**With pink markings on wings, without green.**

Fore wings gray, with darker markings.

Body with a row of rose-colored spots on each side. *Phlegethontius cingulatus.*

Fore wings pale chocolate brown with rich velvety brown patches.

Hind wings pink, outwardly chocolate brown. *Philampelus achemon.*

Fore wings dark olive brown with a buff-colored oblique band from base to tip; veins marked with white.

Hind wings black with a broad pink band. *Deilephila lineata.*

Fore wings olive brown with an oblique buff band; veins not marked with white.

Hind wings with a pinkish band. *Deilephila galii*, form *intermedia.*

Fore wings gray with a pinkish tinge, and deep brown markings.

Hind wings red at base with an eye-like spot.
Smerinthus geminatus.

Fore wings rich brown with a rosy tint.
Hind wings rose color with an eye-like spot.
Smerinthus excæcatus.

Fore wings gray with an olive gray median band.
Hind wings marked with claret red.
Amorpha modesta.

SECTION 6.—**With brown markings, without pink, green or yellow.**

Fore wings rusty brown, basal half paler.
Hind wings rusty brown.....*Ampelophaga chærilus.*

Fore wings chocolate brown with darker shades outwardly.
Hind wings almost uniform chocolate brown.
Enyo lugubris.

Fore wings sooty brown with two rows of white spots and bands not running across the wing.
Hind wing sooty black.
Abdomen with a white band.....*Aëllopos tantalus.*

Fore wings sooty brown with white lines and shades.
Hind wings blackish brown with incomplete white bands.....*Dolba hylæus.*

Fore wings light and dark chestnut brown in form of streaks.
Hind wings brownish white with a central and an outer black band .....*Sphinx kalmiæ.*

Fore wings ashen brown with black dashes.
Hind wings black with two dirty white bands.
Sphinx eremitus.

Fore wings coffee brown, pale along the outer and costal parts and with black streaks between the veins.
Hind wings brown with an ill-defined band in middle.....*Ceratomia amyntor.*

Fore wings sepia brown with lighter scales, and with black dashes near the tip.
Hind wings uniform sepia brown...*Ceratomia catalpæ.*

Fore wings mouse gray with a toothed transverse line and two black dashes.

Hind wings uniform warm brown, tipped with white.
Lapara coniferarum.

Fore wings with a double-toothed transverse line and two angulated lines.
Hind wings as in *coniferarum*....*Lapara bombycoides.*

Fore wings light gray, sometimes streaked with brown.
Hind wings rusty brown with darker outer border.
Dilophonota ello.

Fore wings dark brown with ash-gray markings.
Hind wings dull rusty brown.....*Deidamia inscripta.*

Fore wings light ochre brown, sometimes marked with darker brown.
Hind wings similar, with two narrow lines.
Cressonia juglandis.

SECTION 7.—**With gray or blackish brown markings, without pink, yellow or green.**

Hind wings with a white band.

Fore wings ash gray with four black streaks between the veins.
Thorax gray with two black lines...*Sphinx chersis.*

Fore wings dirty gray with black dashes.
Thorax dull gray with two obscure black lines; sides whitish.....*Sphinx canadensis.*

Fore wings sooty black, grayish in the middle.
Thorax brown black; side gray....*Sphinx gordius.*

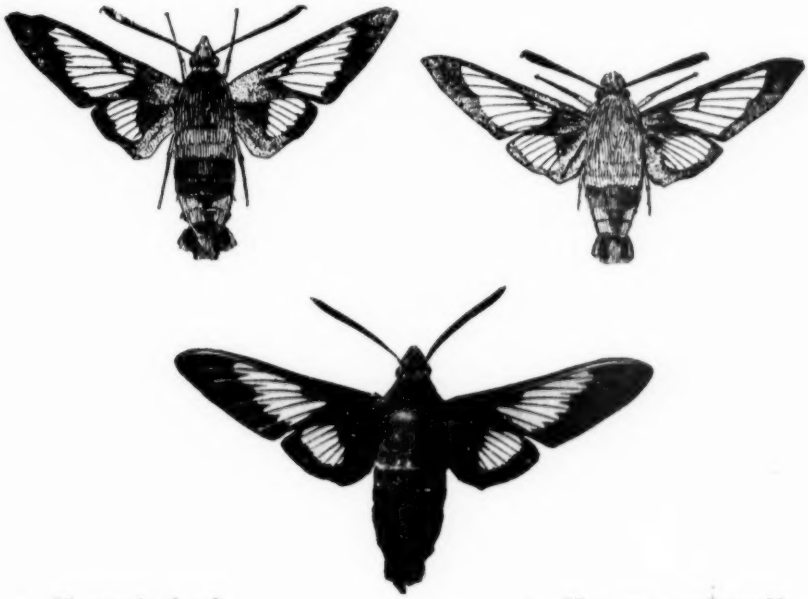
Fore wings deep sooty blackish brown, pale gray along the costal region.
Thorax deep brownish black, sides pale grayish.
Sphinx drupiferarum.

Hind wings without white band.

Fore wings gray with many dark transverse wavy lines.
Thorax grayish bordered with black.
Ceratomia undulosa.

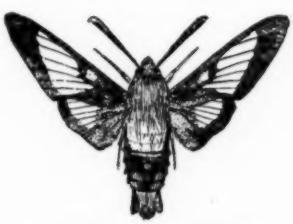
Fore wings light gray with a prominent oblique black dash.....*Chlænogramma jasminearum.*

Fore wings gray streaked with black and with a white dot near the middle.....*Sphinx plebeius.*



1. *Hemaris thysbe.* 2. *H.*, var. *ruficaudis.*
3. *H.*, var. *floridensis.*

Very common, especially in gardens. Double-brooded. It flies in the day in the sunshine during the latter part of May and early June and again late in July and early in August. The variety *ruficaudis* (Fig. 2) is less common than *thysbe.* A second variety, *floridensis*, is very rare in this vicinity, but is common southward. The species ranges from Labrador to Florida and westward to the Mississippi. The caterpillar feeds on different kinds of *Viburnum.* Forms a pupa on the ground in a loose cocoon.



4. *Hemaris gracilis.*

Very rare in this neighborhood. Double-brooded, appearing

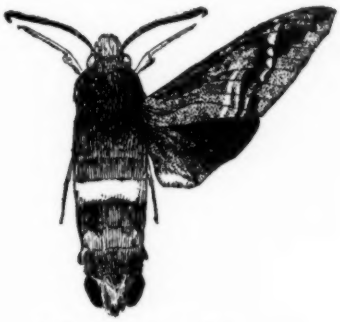
in May and June and again in July and August. It is closely allied to *H. thysbe* var. *ruficaudis*, but differs therefrom by its smaller size and by having a red stripe on each side of the thorax beneath, and three rows of white spots on the under side of the abdomen. It flies during the day in the sunshine.

5. *Hemaris diffinis.*

In the immediate vicinity of New York this species is very rare. It is found from Canada to Florida, and westward to Missouri and Iowa. In certain localities it is rather common. Found during the latter part of May and early in June and again during July and August. It flies during the day in the sunshine. The caterpillar feeds on snowberry (*Symphoricarpus*), feverwort (*Triosteum perfoliatum*) and bush-honeysuckle. Forms a pupa on the ground in a loose cocoon.

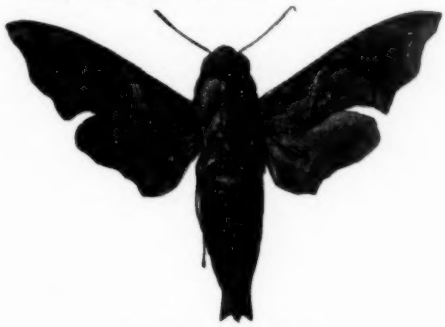
6. *Hemaris axillaris.*

Very rare in this vicinity, but more abundant in the Western States. It is found from New York to Texas. In general appearance it resembles *H. diffinis*, but the outer border of the fore wing is broader, and is more or less toothed inwardly, while in *diffinis* it is even. The body is longer. The moth flies during the day in the sunshine. The caterpillar feeds on different kinds of honeysuckle. Forms a pupa in a loose cocoon on the ground.



7. *Aëllopos tantalus.*

This southern species is found occasionally in this vicinity. It may be known by its sooty black color and the white third segment of the body. It flies during the daytime in the hottest sunshine. The early stages are unknown.



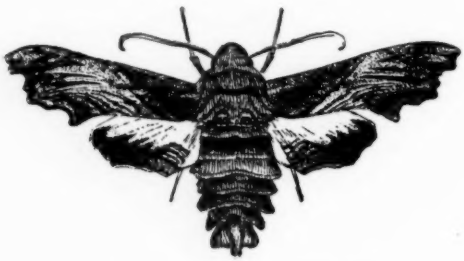
8. *Enyo lugubris.*

A southern species very rarely found in this vicinity. It is common in the Southern States, Mexico and the West Indies.

9. *Amphion nessus.*

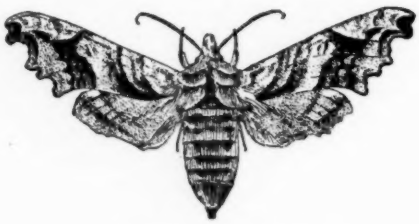
Rich dark brown with darker velvety markings and two

yellow transverse bands on the abdomen. It is found late in May and early in June and again in August. It flies during the hottest sunshine and also in the evening. Found from Canada to Florida, and westward to Iowa. The caterpillar feeds on grape, willow-herb (*Epilobium*) and Virginia creeper. Forms a pupa in a loose cocoon on the ground.



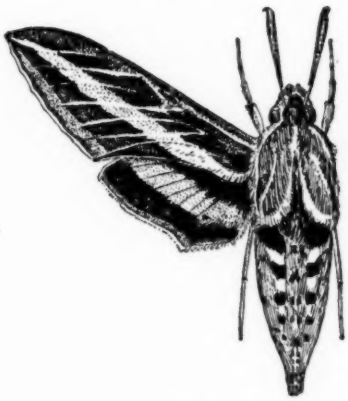
10. *Sphecodina abbotii.*

Very common in this vicinity. The moth appears in May and June and again during the latter part of July and early in August. Found from Canada and Eastern States westward to Iowa. The caterpillar feeds on grape and Virginia creeper. It enters the ground to pupate.



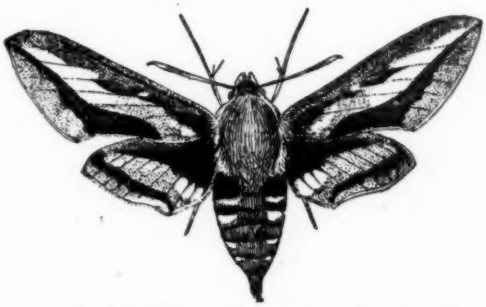
11. *Deidamia inscripta.*

Not common in this vicinity. The moth makes its appearance during the latter part of May and the first days in June. Found from Canada to Virginia and westward to the Mississippi valley. The caterpillar feeds on grape and Virginia creeper. Enters the ground to pupate.



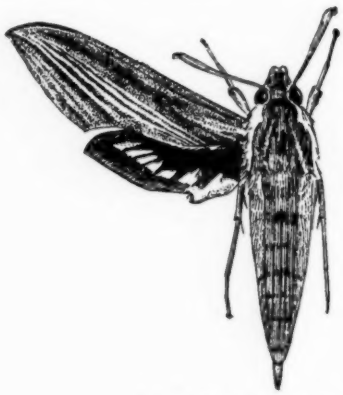
12. *Deilephila lineata.*

This species is found in the United States, Canada and Cuba. In this vicinity common everywhere. It flies early in the evening and often in bright daylight. The insect is double-brooded, the first brood appearing during June and July, and the second during the latter part of August and early in September. The caterpillar feeds on purslane, buckwheat, turnip, watermelon, chickweed, dock, evening primrose, apple, currant, grape and gooseberry. Enters the ground to pupate.



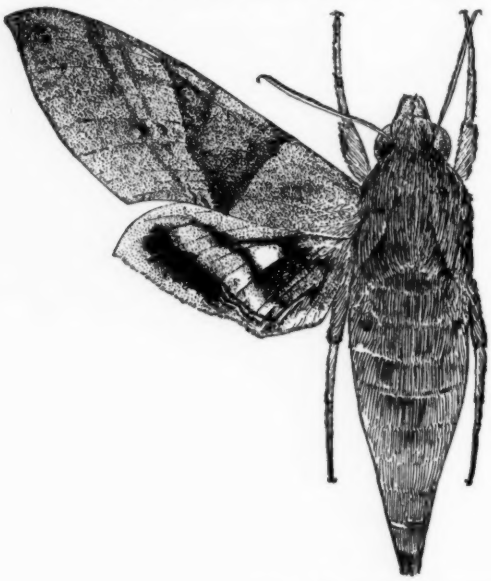
13. *Deilephila galii*, form *intermedia.*

Not common in this vicinity. Found during June and again in August. It is found from Canada to Georgia and westward to California, also found in Europe. The pink median band on the hind wings in the European form (*galii*) is much paler than in the American form (*intermedia*). The caterpillar feeds on purslane, evening primrose and willow-herb (*Epilobium*). Enters the ground to pupate.



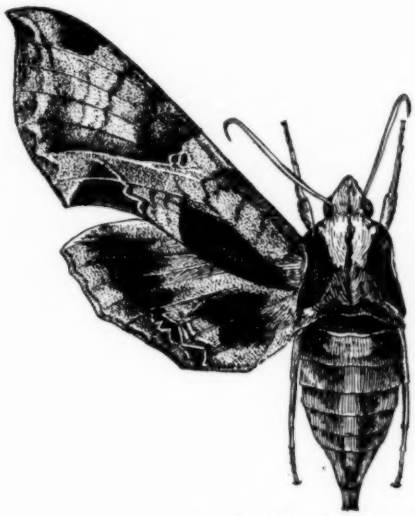
14. *Theretra tersa.*

Quite rare in this vicinity, but common in the Southern States, West Indies, Central and South America. It ranges northwardly as far as Canada. It is usually found in flower gardens. The caterpillar feeds on *Bouvardia*, buttonweed (*Spermacoce glabra*) and *Manetta bicolor*. Enters the ground to pupate.



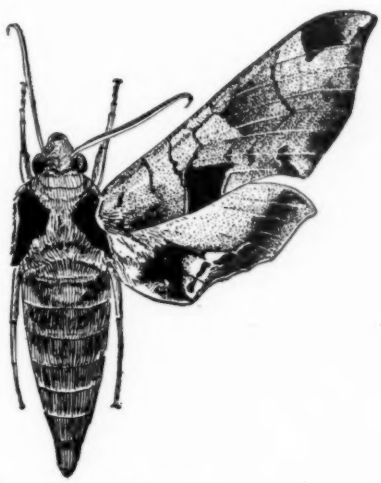
15. *Argeus labruscæ.*

A South American species, occurring northward to Canada. In the north it is an occasional visitor, and is very rarely taken.



16. *Philampelus pandorus.*

Rather common in this vicinity, in gardens and vineyards. It is double-brooded, the first brood appearing during June and early in July, and the second in August. Found in the United States east of the Great Plains and also in Canada. The caterpillar feeds on grape and Virginia creeper. It enters the ground to pupate.



17. *Philampelus achemon.*

This species is double-brooded, the first brood appearing in

June and July, and the second in August. It is found throughout the United States and Canada. The caterpillar feeds on grape and Virginia creeper. Enters the ground to pupate.

18. *Philampelus vitis.*

This species has been recorded from South America, Central America, Cuba, Texas, Florida, and along the Atlantic coast to Massachusetts. It is a southern species, and is very rarely taken in this vicinity. The caterpillar feeds on grape. Enters the ground to pupate.

19. *Philampelus linnei.*

Inhabits South and Central America, Cuba and the Southern

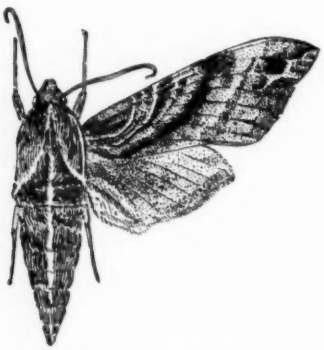
States, and is said to be found northward as far as Massachusetts. It is closely allied to *P. vitis*, but is much darker.

20. *Ampelophaga chœrilus.*

This is a rather common species, and is found in open woods. It may be known readily by its rusty brown color. Found from Canada to Georgia, and westward to Iowa. Double-brooded; on the wing from June to August. The caterpillar feeds on different kinds of *Viburnum*, sour-gum and azalea. It spins a rude cocoon amongst leaves on the surface of the ground.

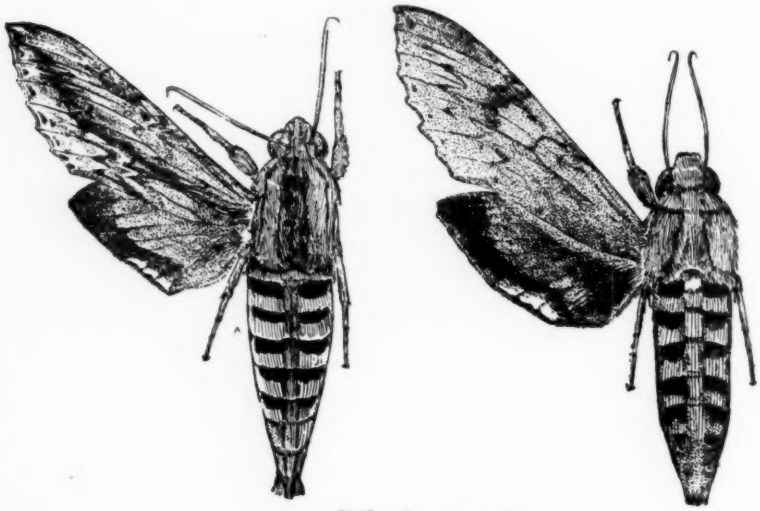
21. *Ampelophaga myron.*

Rather common in gardens about grapevines. It is double-brooded, the first brood appearing in June and July and the second in August. Found from Canada to Florida, and westward to Missouri and Iowa. The caterpillar feeds on grape. Spins a loose cocoon among leaves on the ground.



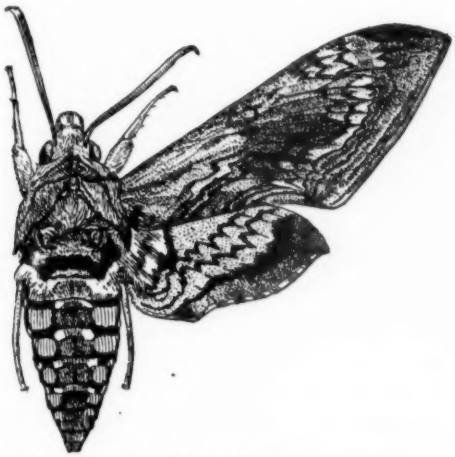
22. *Ampelophaga versicolor.*

Quite rare and local in this vicinity. The moth may be known by the bright green coloring on the fore wings, with more or less distinct whitish transverse lines. It is double-brooded, the first brood appearing in June and early in July and the second in August. The caterpillar feeds on button-bush (*Cephalanthus occidentalis*) and swamp-loose-strife (*Nesæa verticillata*). Spins a loose cocoon among leaves on the ground.



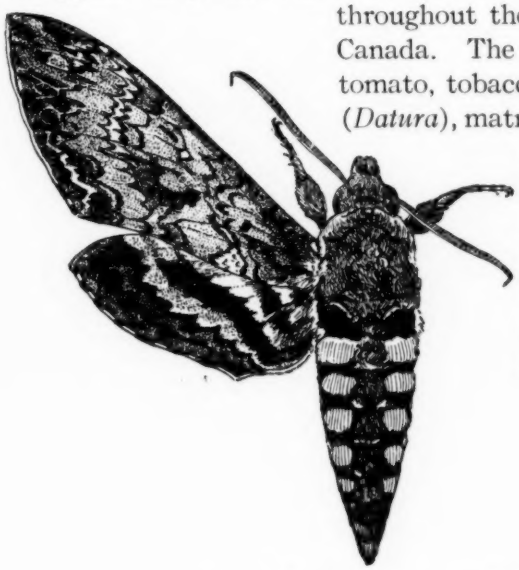
23. *Dilophonota ello.*

A common southern species, but rarely found in this vicinity. It is found from Brazil northward to Canada.



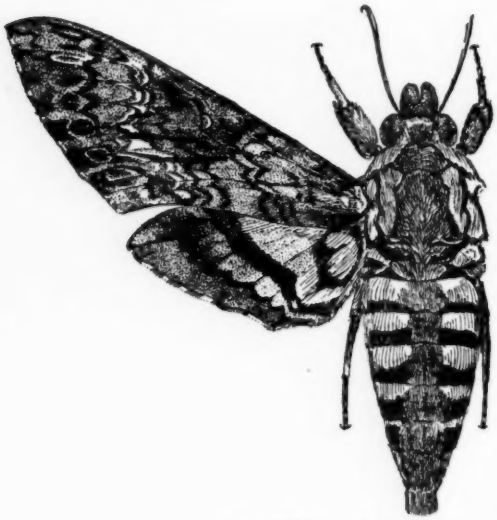
24. *Phlegethontius quinquimaculatus.*

Common and double-brooded in this vicinity. The first brood appear in June, and the second in August. It is found throughout the United States and Canada. The caterpillar feeds on tomato, tobacco, Jamestown-weed (*Datura*), matrimony-vine (*Lycium vulgare*) and ground-cherry (*Physalis viscosa*). The pupa has a long arched tongue-case. Enters the ground to pupate.



25. *Phlegethontius carolina.*

Found in the United States from the Atlantic to the Pacific, in Canada, Mexico, and the West Indies. It is common and double-brooded in this vicinity. The caterpillar feeds on tomato, tobacco, Jamestown-weed (*Datura*) and matrimony-vine. Enters the ground to pupate.



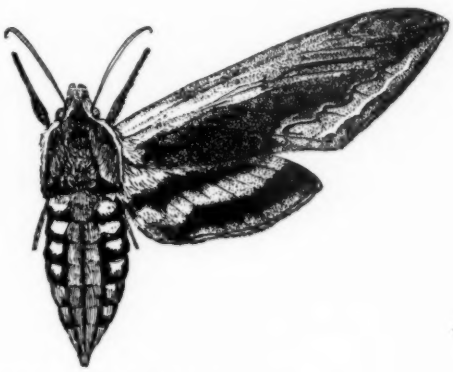
26. *Phlegethontius cingulatus.*

May be known readily by the rose-red spots on the abdomen. It is found from Canada to Brazil, and to the west coast of our continent, and also in the Hawaiian Islands. Double-brooded; the first brood appears in June and the second in August and September. Enters the ground to pupate.

27. *Phlegethontius rusticus.*

A common southern species rarely taken in this vicinity. Its range of distribution extends from South America northward to

New York; also found in the West Indies. The caterpillar feeds on lilac, privet and fringe-bush (*Chionanthus*). Enters the ground to pupate.



28. *Sphinx drupiferarum.*

Not common in this vicinity. Double-brooded, appearing in June and again early in August. Found from Canada to Florida and westward. The caterpillar feeds on apple, plum and cherry. Enters the ground to pupate.

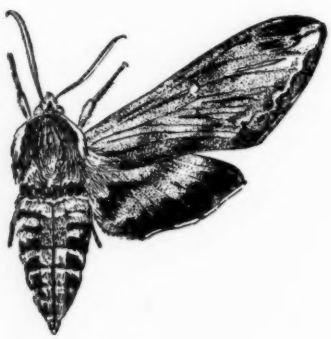
29. *Sphinx kalmiæ.*

Not common. Double-brooded. It is on the wing in June and again late in July and early in August. Found from Canada

to Georgia and westward to Missouri. The caterpillar feeds on lilac and laurel. Enters the ground to pupate.

30. *Sphinx lucitiosa.*

Very rare in this vicinity. Double-brooded. The moth is on the wing in June and again in August. The caterpillar feeds on willow and poplar. Enters the ground to pupate.

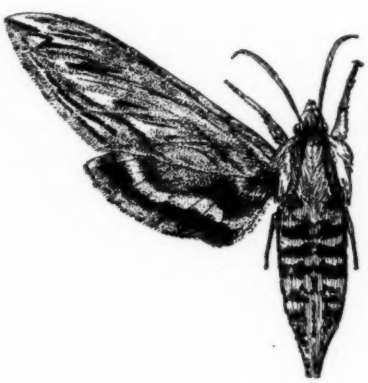


31. *Sphinx gordius.*

Rather common, but not abundant in this vicinity. Double-brooded, appearing in June and July and again in August. It ranges from Canada to Georgia and westward to the Mississippi, and probably farther westward. The caterpillar feeds on apple, pear, ash and wax-myrtle (*Myrica*). Enters the ground to pupate.

32. *Sphinx chersis.*

Double-brooded in this vicinity, appearing in May and June and again late in July and early in August. Found from Canada to Florida, and westward to the Pacific coast. The caterpillar feeds on lilac, ash and privet. Enters the ground to pupate.



33. *Sphinx canadensis.*

Found in Newfoundland, Canada, New England States to New York and Ohio. It is a very rare species, and has not been

found in this vicinity, but it should be searched for. The early stages are unknown.

34. *Sphinx eremitus.*

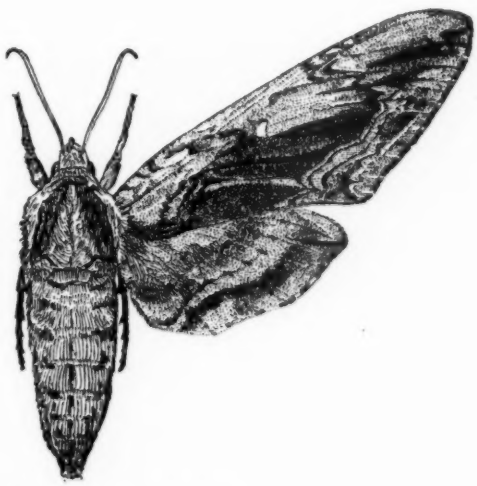
Quite rare and local in this vicinity It is double-brooded. The caterpillar feeds on spear-mint (*Mentha*) and wild bergamot (*Monarda*). Enters the ground to pupate.

35. *Sphinx plebeius.*

Rather common. Usually found in gardens about the trumpet-vine, which is the food of the caterpillar. It is double-brooded, appearing in June and again late in July and early in August. Found from Canada to Florida and westward to the Mississippi. Enters the ground to pupate.

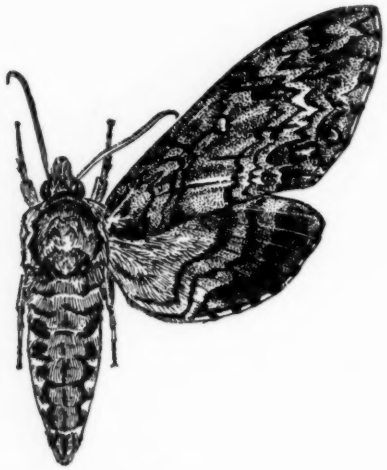
36. *Chlænogramma jasminearum.*

Quite rare and double-brooded. It is found from Canada to Georgia and westward. The caterpillar feeds on ash. Enters the ground to pupate.



37. *Ceratomia amyntor.*

Rather common. Double-brooded. Found from Canada to Virginia, westward to Missouri and Iowa. The caterpillar feeds on elm, birch and linden. Enters the ground to pupate.



38. *Ceratomia undulosa.*

Rather common and double-brooded in this vicinity, the first brood appearing in June and the second in August. It is found from Canada to Carolina, and westward to Iowa. The caterpillar feeds on ash, lilac and privet. Enters the ground to pupate.

39. *Ceratomia catalpæ.*

A southern species gradually extending its range northward. It is exceedingly common in the vicinity of Philadelphia, where

the catalpa trees are sometimes completely defoliated by the caterpillars. The species has made its appearance at Lakehurst, New Jersey, and without doubt before long will be found in this vicinity. The caterpillars are social and live in large colonies, differing in this respect from all other species of Sphingidæ. Enters the ground to pupate.

40. *Dolba hylæus.*

Not common in this vicinity. In general appearance it resembles a miniature *Phlegethontius rusticus* (No. 27). It is found from Canada to Florida and westward to Iowa. The caterpillar feeds on the ink-berry (*Ilex glabra*). Enters the ground to pupate.

41. *Lapara coniferarum.*

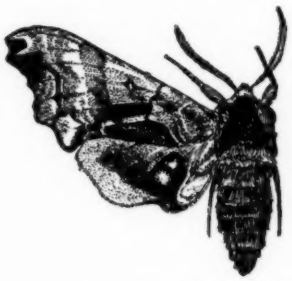
Very rare in this vicinity. Found from Canada to Florida, The caterpillar feeds on pine. Enters the ground to pupate.

42. *Lapara bombycoides.*

Very rare in this vicinity. Found from Canada to Florida, and westward to the Mississippi. The caterpillar feeds on pine. Enters the ground to pupate.

43. *Amorpha modesta.*

Rather scarce in this vicinity, but more common in the Northern and Western States. It appears in the latter part of July and August, and may be double-brooded. The caterpillar feeds on willow and poplar. Enters the ground to pupate.



44. *Smerinthus geminatus.*

A common species in this vicinity. It is double-brooded, the first brood appearing in June and July, and the second in August. The moth varies from light to dark gray on the fore wings. Found from Canada to Virginia and westward to Iowa. The caterpillar feeds on willow, poplar, plum, apple, elm, ironwood, hazel, hornbeam, birch, ash etc. Enters the ground to pupate.

45. *Smerinthus excæcatus.*

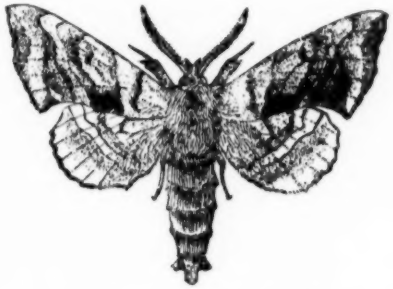
Common in this neighborhood. Double-brooded, appearing in June and July and again in August. It is found throughout the eastern United States and Canada. The caterpillar feeds on cherry, plum, apple, pear, raspberry, rose, elm, oak, hazel, hornbeam, ironwood, birch, willow, poplar, ash etc. Enters the ground to pupate.

46. *Smerinthus myops.*

Sometimes rather common. It is double-brooded, the first brood appearing in June and July and the second in August. Found from Canada to Florida and westward to the Mississippi. The caterpillar feeds on wild and cultivated cherry. Enters the ground to pupate.

47. *Smerinthus astylus.*

This rare species may be known by its plain orange brown colors and markings. Double-brooded, the first brood appearing late in May and early in June, and the second coming out in July and August. Found from Canada to Pennsylvania, and probably also southward and westward. The caterpillar feeds on huckleberry, dangleberry and *Andromeda ligustrina.* Enters the ground to pupate.



48. *Cressonia juglandis.*

Not rare in this vicinity. Double-brooded. The first brood appears in June and the second in August. The species is subject to considerable variation; some specimens are uniformly pale fawn color or ochraceous, with the transverse lines distinct, while other examples are more or less covered with dark brown so as to almost obscure the ground color and transverse lines. It is found from Canada to Florida and westward to the Mississippi and Texas. The caterpillar feeds on walnut, butternut, hickory and ironwood. Enters the ground to pupate.

THE AMERICAN MUSEUM JOURNAL.

EDMUND O. HOVEY, *Editor.*

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Siberia,	Alaska,	Central America,	Greenland,
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Japan,	Mexico,	Martinique,	Hudson Bay,
	The Bahamas,	St. Vincent,	Cuba.

Maintains scientific publications:
Memoirs—twenty-two have been issued.
Bulletins—sixteen volumes have been issued.
Journal—two volumes have been issued.

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Additional members.
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Funds to make additional groups similar to those in the Bird, Mammal and Ethnology Halls.
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Means for collecting and preserving representative examples of animals on the verge of extinction.
Means for collecting fossils and geological specimens.

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